

**REMARKS**

The September 6, 2006 Office Action regarding the above-identified application has been carefully considered. The independent claims have been amended to further highlight a distinction over art applied in the latest Office Action. Care has been taken to avoid introduction of new matter. For reasons discussed below, it is believed that this case is in condition for allowance. Prompt favorable reconsideration of this amended application is requested.

**The Office Action included an objection to the Abstract** for allegedly failing to “summarize the invention.” The objection also asserted that the Abstract should not include extensive design details but should give the organization of the machine or apparatus. By amendment above, the original Abstract has been replaced with a new Abstract drafted to address the concerns expressed in the objection. It should be noted that the Abstract is that of the disclosure and as such is not intended as the summary “of the invention.” In view of the replacement of the original Abstract with a new one, it is submitted that the objection to the Abstract has been overcome.

**The Office Action included an objection to the specification**, specifically to the first sentence of the paragraph beginning on page 22, line 23, on the grounds that the phrase “she/he must designate the configuration by a plural times” was unclear. By amendment above, Applicants have revised the sentence to refer to state that “she/he must input designations of the configuration a number of times.” It is submitted that the amended description in this paragraph is clear and concise and that the objection to the description should be withdrawn.

**The Office Action included an objection to claims 1 and 3**, which listed several points believed to be informal. By amendment above, Applicants have revised the claims to clarify the alleged informalities. It is submitted that the amended claim language is clear and concise and that the objection claims 1 and 3 should be withdrawn.

**Claims 1-6 stand rejected under the first paragraph of 35 U.S.C. §112 for alleged lack of enabling disclosure** on the ground that the description does not clearly define a “shell-model.” The rejections are traversed.

The term “shell-model,” as used in the claims, is a model comprising internal surfaces, with a width attribute associated with each internal surface. A “shell-model” may be created directly. Alternatively, a “shell-model” may be created by beginning with a configuration model (see FIG. 6) produced by a three-dimensional configuration modeler, and converting each element into an internal surface (see FIG. 12(B)). It is submitted that the claims are enabled by the specification and figures, particularly FIG. 6 and FIG 12(B).

**Claims 1-6 stand rejected under the second paragraph of 35 U.S.C. §112 as indefinite** for omitting essential elements to produce an analytical shell-model. The rejections are traversed.

The rejection asserts that claims 1 and 3 lack essential elements to produce an analytical shell-model. Applicants respectfully disagree. Claim 1 recites “a reference-plate thickness size inputting means . . . and means for . . . producing an internal-surface model.” The internal-surface model with the associated thickness size is an analytical shell-model.

Claim 3 recites “a reference-plate thickness inputting means” and “an internal surface producing means” which registers the offset surface “as in a form of an internal-surface model.” The internal-surface model with the associated thickness size is an analytical shell-model. It is submitted that these claims are definite because they include essential elements to produce an analytical shell-model. The non-sequitor regarding “arbitrary” surfaces has been eliminated from claim 3.

The rejection asserted that the wherein clause of claim 6 was confusing and proposed an alternative interpretation. Claim 6 has been amended to recite “wherein said internal-surface model producing means calculates the plate thickness on each of the internal-surface models as targets from the face-to-face distance between two (2) surfaces of the pair, and wherein this calculated plate thickness is set as the thickness attribute of the internal surface model of the target.” The amended language is similar to the interpretation proposed in the Action. It is submitted that the amended claim is definite.

**Claims 1-6 also stand rejected as directed to non-statutory subject matter under 35 U.S.C. §101**, based on an interpretation of the original form of the claims as being directed to software per se. It is submitted that “apparatuses” are either “machine” or “manufacture” per 35 U.S.C. §101, not software per se. Further, the claim terms “inputting means” and “means for making” may be hardware circuitry, or may be computer readable media containing computer executable instructions.

The claimed “internal-surface model” is a useful result, which is useful for finite element analysis. The claimed “internal-surface model” is a tangible result which is similar to a share price. “[T]ransformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculation into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces ‘a useful, concrete and tangible result’ - a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.” State Street, 149 F.3d at 1373, 447 USPQ2d at 1601. It is submitted that the claims are statutory.

**Claims 1 and 2 stand rejected under 35 U.S.C. §102(e)** as anticipated by U.S. Patent No. 7,002,575 to Tonooka.

**Claims 3, 5 and 6 stand rejected under 35 U.S.C. §103** as unpatentable over Tonooka in combination with U.S. Patent No. 7,038,700 to Kawaguchi et al. (hereinafter Kawaguchi).

**The Office Action rejected claim 4 under 35 U.S.C. §103** as unpatentable over Tonooka and Kawaguchi, further in view of a published article by Mobley et al. (hereinafter Mobley).

Independent claim 1 recites “a reference-plate thickness size inputting means for inputting a reference-plate thickness size to be used when specifying a thin-plate portion from the configuration model; and means for making two (2) surfaces, being narrower therebetween than the reference-plate thickness size, which is inputted from said reference-plate thickness inputting means, in a pair of surfaces, producing an offset-surface between the pair of surfaces, and producing an internal-surface model by seaming on an outer periphery portion of the offset-surface.”

Independent claim 3 recites “a reference-plate thickness inputting means for inputting a reference-plate thickness size to be used when specifying a thin-plate portion from the configuration model; a pair-surfaces acknowledging means for acknowledging two (2) surfaces, being equal or less than the reference-plate thickness size, which is inputted by said reference-plate thickness inputting means, in face-to-face distance between the arbitrary two (2) surfaces constructing the configuration model; a top/bottom side rib attribute acknowledging means for acknowledging the pair-surfaces acknowledged by said pair-surfaces acknowledging means to be one of a top side surface, a bottom side surface, and a rib surface; an offset-surface producing means for producing an offset-surface by offsetting a group of surfaces on either the top side or the bottom side, which are acknowledged by said top/bottom side rib attribute acknowledging means, and the rib surface, respectively, in direction of a normal line towards the inside of the

configurations thereof; a seam-surface producing means for seaming between the offset-surface, which is produced from either the top or the bottom surface by means of said offset-surface producing means, and also the offset-surface produced from the rib surface; and an internal-surface producing means for registering the offset-surface seamed by said seam-surface producing means, as in a form of an internal-surface model.”

At a minimum, the cited prior art does not disclose (expressly or inherently) the above recited elements. It is submitted that the claims are allowable over the cited references.

Anticipation under 35 U.S.C. § 102 requires that “each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.”

*Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed Cir. 1987). Additionally, to establish *prima facie* obviousness under 35 U.S.C. § 103(a) requires that all the claim limitations must be taught or suggested by the prior art. *In re Rokya*, 490, F.2d 981, 180 USPQ 580 (CCPA 1974). At a minimum, the cited prior art does not disclose (expressly or inherently) the above recited elements.

Tonooka relates to calculation of thickness between two lines (graphical elements) on the two-dimensional drawing. Also, Tonooka is limited to two-dimensional drawings. Toonoka does not produce an internal surface, and does not associate a thickness as an attribute of the internal surface. Hence, Tonooka does not produce the shell model nor the internal-surface model in the manner recited in Applicants’ independent claims. Toonoka therefore does not anticipate any of the pending claims.

The addition of Kawaguchi would not be enough to satisfy the claim requirements. Kawaguchi relates to production of a mesh model of new configuration through modifying the mesh model, but never producing an internal-surface model. On the contrary, Kawaguchi relates

to a solid model. Kawaguchi does not produce an internal surface, and does not associate a thickness as an attribute of the internal surface. Hence, Tonooka in combination with Kawaguchi would not produce an internal-surface model in the manner claimed.

Further addition of Mobley still would not be enough to meet the claim requirements. Mobley relates to simplification or defeaturing of the configuration model, but does not teach or suggest an internal-surface model. Also, although Mobley does indicate Top and Bottom regarding location of a part, Mobley does not use these surfaces for producing an internal-surface model. Mobley does not produce an internal surface, and does not associate a thickness as an attribute of the internal surface. Hence, Tonooka, Kawaguchi, and Mobley would not meet the claim requirements in these points.

Thus, the cited references, alone or in combination, do not teach or suggest all of the elements of the independent claims 1 and 3.

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as independent claims 1 and 3 are patentable for the reasons set forth above, it is respectfully submitted that all claims dependent thereon (claims 2; and 4-6 respectively) are also patentable. In addition, it is respectfully submitted that the dependent claims are patentable based on their own merits by adding novel and non-obvious features to the combination.

Thus, dependent claims 2, and 4-6 are patentable over the cited references.

It is believed that this response addresses all issues raised in the September 6, 2006 Office Action. However, if any further issue should arise that may be addressed in an interview

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or by an Examiner's amendment, it is requested that the Examiner telephone Applicants' representative at the number shown below.

To the extent necessary, if any, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

A handwritten signature in black ink, appearing to read 'Eduardo Garcia-Otero', with a long horizontal flourish extending to the right.

Eduardo Garcia-Otero  
Registration No. 56,609

600 13<sup>th</sup> Street, N.W.  
Washington, DC 20005-3096  
Phone: 202.756.8000 KEG/EG:cac  
Facsimile: 202.756.8087  
**Date: January 3, 2006**

**Please recognize our Customer No. 20277  
as our correspondence address.**